Status of the Claims

Claims 1-6 are pending. Claims 7-29 are canceled pursuant to the election made on June 11, 2002. The Applicants will file one or more divisional patent applications in due course to claim the subject matter recited in claims 7-29. Claims 30-32 are new and recite subject matter already disclosed in the original specification. Therefore, claims 1-6 and 30-32 are pending in the current prosecution.

Claims 1-6 are rejected under 35 U.S.C. § 112, first paragraph. Claims 1-6 are rejected under 35 U.S.C. § 112, second paragraph. Claims 1-6 are rejected under 35 U.S.C. § 102(b) as being anticipated by David (U.S. Patent 5,496,528) or Wong (U.S. Patent 5,686,368). Claims 1-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over David or Wong. The Applicants respectfully traverse all of these rejections for the reasons set forth below.

Support for New Claims and Amendment

Claim 30 recites a cross-sectional dimension less than 5 μm, which was recited in the original claim 4. Claims 31 and 32 recite a cross-sectional dimension greater than about 1 μm. Such dimension is found, for example, in Figures 1 and 2.

Claim 1 is amended to recite a polygonal cross section, which is disclosed in paragraphs 8 and 23 of the original specification.

Claim Rejection Under 35 U.S.C. § 112, First Paragraph

Claims 1-6 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such as way as to enable one skilled in the art to make and/or use the invention. The Applicants respectfully traverse this rejection because the specification discloses all the necessary information and teaches how to make acicular bodies of the claimed

metal compounds. For example, the method of making the claimed acicular bodies is disclosed in paragraph 16. Paragraph 17 teaches that:

> "[t]he solution of the precursor inorganic material may be an aqueous solution of a water-soluble inorganic precursor material or an acidic solution of the same when the solubilization of such precursor in the solution need be enhanced. . . . Any acid that is capable of dissolving the chosen inorganic precursor may be used to produce the acid solution. For example, hydrochloric acid, nitric acid, sulfuric acid, citric acid, or acetic acid may be used. The choice of acid is determined by the solubility limit of the inorganic precursor in the acid."

Paragraph 18 teaches:

> "[e]sters of dicarboxylic acids that may be used in the present invention are methyl, ethyl, propyl, dimethyl, diethyl, and dipropyl esters. Examples of dicarboxylic acids that may be used to form an ester for the process of the present invention are oxalic acid, malonic acid, succinic acid, and glutaric acid. . . . The aqueous or acidic solution of inorganic precursor is slowly added into the dicarboxylic acid ester solution. . . . "

Paragraph 19 teaches that the precipitated bodies are then separated, dried, and fired at a temperature from about 400 to about 1400 ^{0}C.

Paragraphs 28 and 29 teaches the use of the claimed acicular bodies in composite materials.

Therefore, the Applicants respectfully submit that the specification fully discloses how to make and use the invention claimed in claims 1-6. Consequently, claims 1-6 are fully enabled by the specification.

Furthermore, the Examiner rejected the same claims under 35 U.S.C. § 103(a) as being obvious to one having ordinary skill in the art. Office action, page 8. If these claims were deemed obvious to a person having ordinary skill in the art, they could not at the same time be rejected as not

enabling the same person having ordinary skill in the art to make and use the invention.

Claim Rejection Under 35 U.S.C. § 112, Second Paragraph

Claims 1-6 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Examiner objects to the phrase "of the Periodic Table" in claims 1 and 5. This phrase has been relocated to immediately after "VIIIA" as the Examiner suggests.

Claim 4 has been amended to eliminate the recitation of alternative ranges of the cross-sectional dimension.

Therefore, claims 1-6 now overcome this rejection.

Claim Rejection Under 35 U.S.C. § 102(b)

Claims 1-6 are rejected under 35 U.S.C. § 102(b) as being anticipated by David or Wong.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a *single* prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989).

Neither David nor Wong discloses that their oxide fibers or particulates have a polygonal cross section, as is recited in claims 1-6. In fact, Wong consistently speaks of "fiber diameter." Column 15, lines 31, 49, and 54. Such a characterization of the fiber coupled with the fact that Wong uses organic polymeric

fibers (rayon) as the templates for his oxide fibers suggests that these oxide fibers generally have circular cross section.

Since neither David nor Wong discloses each and every element of each of claims 1-6, neither David nor Wong anticipates these claims.

Claim Rejection Under 35 U.S.C. § 103(a)

Claims 1-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over David or Wong. The Applicants respectfully traverse this rejection because neither David nor Wong teaches or suggests all of the elements of claims 1-6.

"[T]he legal conclusion of obviousness [under 35 U.S.C. § 103(a)] requires that there be some suggestion, motivation, or teaching in the prior art whereby the person of ordinary skill would have selected the components that the inventor selected and used them to make the new device." *C.R. Bard, Inc. v. M3 Systems, Inc.*, 48 U.S.P.Q.2d 1225, 1231 (Fed. Cir. 1998). Thus, in order for the prior art to render the claimed invention obvious, all of the elements thereof must be taught or suggested in the prior art. "What must be found obvious to defeat the patentability of the claimed invention is the claimed combination." *The Gillette Co. v. S.C. Johnson & Son, Inc.*, 16 U.S.P.Q.2d 1923, 1927 (Fed. Cir. 1990).

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." "All words in a claim must be considered in judging the patentability of that claim against the prior art." MPEP § 2143.03 (8th Ed., Aug. 2001).

Neither David nor Wong discloses or suggests that their oxide fibers or particulates have a polygonal cross section, as is recited in claims 1-6. In fact, Wong consistently speaks of "fiber diameter." Column 15, line 31, 49, and 54. Such a characterization of the fiber coupled with the fact that Wong uses organic

polymeric fibers (rayon) as the templates for his oxide fibers suggests that these oxide fibers generally have circular cross section.

Since neither David nor Wong teaches or suggests all of the elements of each of claims 1-6, neither David nor Wong render these claims obvious.

In view of the above, it is submitted that the claims are patentable and in condition for allowance. Reconsideration of the rejection is requested. Allowance of claims at an early date is solicited.

Respectfully submitted,

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ATTACHMENT

VERSION OF CLAIMS WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) An acicular body comprising at least one inorganic compound of a metal selected from the group consisting of Groups IB, IIA, IIB, IIIA, IIIB, IVA, IVB, VA, VB, VIA, VIB, VIIA, VIIB, of VIIIA of the Periodic Table, rare earth metals [of the Periodic Table], and mixtures thereof, said acicular body having a polygonal cross section.

4. (Amended) The acicular body according to claim 2 having a cross-sectional dimension [preferably] less than about 10 μm[, more preferably less than about 5 μm].

5. (Amended) An acicular body comprising at least one oxide of at least one metal selected from the group consisting of Groups IB, IIA, IIB, IIIA, IIIB, IVA, IVB, VA, VB, VIA, VIB, VIIA, VIIB, of VIIIA of the Periodic Table, rare earth metals [of the Periodic Table], and mixtures thereof, said acicular body having a polygonal cross section.